

## Relations industrielles Industrial Relations



# Reservation Wages in Canadian Labour Markets Le taux de salaire d'acceptation sur les marchés du travail au Canada

Abrar Hasan et Surendra Gera

Volume 37, numéro 1, 1982

URI : <https://id.erudit.org/iderudit/029233ar>

DOI : <https://doi.org/10.7202/029233ar>

[Aller au sommaire du numéro](#)

Éditeur(s)

Département des relations industrielles de l'Université Laval

ISSN

0034-379X (imprimé)

1703-8138 (numérique)

[Découvrir la revue](#)

Citer cet article

Hasan, A. & Gera, S. (1982). Reservation Wages in Canadian Labour Markets. *Relations industrielles / Industrial Relations*, 37(1), 65–92.  
<https://doi.org/10.7202/029233ar>

### Résumé de l'article

L'article étudie les exigences salariales des chômeurs en quête de travail à partir de la théorie de la recherche d'emploi, laquelle soutient que le chômage est un investissement productif pour les individus. Cette théorie tend à démontrer que les imperfections des marchés du travail génèrent tout un éventail de taux de salaires pour un type donné de qualification et qu'il serait payant pour un chômeur de ne pas accepter automatiquement la première offre salariale qui se présente, mais d'en rechercher une qui soit plus appropriée. Cependant, cette recherche ne peut se prolonger indéfiniment parce qu'elle coûte quelque chose. Pour maximiser ses revenus, le chercheur d'emploi doit ajuster le gain qu'il escompte obtenir au coût de la recherche additionnelle. L'offre salariale qui marque ce point d'équilibre se définit sous le nom de taux de salaire d'acceptation. La théorie de la recherche d'emploi soutient que les individus se comportent comme s'ils connaissaient la notion du salaire d'acceptation qu'ils espèrent, soit le refus d'offres salariales inférieures au salaire d'acceptation et l'acquiescement à un salaire dont le taux lui est égal ou supérieur. Le salaire d'acceptation représente donc la demande salariale du travailleur ou ses exigences salariales, et les deux expressions sont synonymes. Si l'on peut découvrir que les individus se comportent de façon à obtenir le salaire d'acceptation, on aura réussi à démontrer que la recherche est valable comme explication théorique du chômage. Ainsi, l'objet premier de la présente étude est de vérifier de façon empirique l'hypothèse du salaire d'acceptation.

Le deuxième objectif de l'article consiste à examiner l'influence du salaire d'acceptation sur la durée du chômage. L'une des questions qui revient constamment, tant dans la théorie que dans la pratique économiques, c'est la nature des ajustements économiques que les chômeurs sont disposés à accepter afin d'obtenir du travail. On présente souvent le marché du travail comme exemple d'un marché d'une rare rigidité en matière d'ajustements des taux de salaires à la baisse. Nous examinons ces ajustements de salaires au fur et à mesure que la durée du chômage s'allonge. Ceci sera fait pour différents groupes de travailleurs et dans des conditions de marché différentes. Les travailleurs à bas salaire sont placés dans une catégorie différente de ceux qui reçoivent des salaires plus élevés. Le cas des travailleurs syndiqués est considéré à part de ceux qui ne le sont pas. Les écarts dans les taux de chômage sont utilisés comme indice pour identifier les divers états du marché du travail.

Les données proviennent d'une enquête sur la main-d'œuvre du ministère de l'Industrie et du Commerce pour l'année 1978. Cette enquête englobe les individus de diverses localités, individus qui ont été mis à pied ou qui ont abandonné volontairement leur emploi à la suite de la fermeture d'un établissement ou de la diminution de la production. Les équipes d'enquêteurs ont recueilli la liste de ces personnes auprès des employeurs dans les localités choisies et elles ont fait des efforts pour rencontrer chacune de ces personnes. On leur a demandé d'indiquer leurs expériences de travail et de chômage pendant la période de 1973 à 1978. Puisque la théorie de la recherche insiste sur la nature volontaire du chômage, on a vérifié les implications de la théorie à l'aide de données sur les périodes de chômage où le travailleur avait décidé de son propre chef d'abandonner le travail.

Les constatations que l'on a faites relativement aux taux de salaires postérieurs aux périodes de chômage sont utilisées pour estimer la fonction du salaire d'acceptation en deux étapes. En premier lieu, on a tenté de déterminer pour chaque individu le salaire qu'il escomptait obtenir en tenant compte pour chacun des caractéristiques du marché du travail. En deuxième lieu, le taux de salaire qu'on escomptait obtenir tient compte de variables qui représentent le coût de la recherche pour établir le taux de salaire d'acceptation. En accord avec l'hypothèse de la théorie de la recherche, plus le salaire escompté est élevé, plus le taux de salaire d'acceptation augmente, alors que plus le coût de la recherche s'accroît, plus le taux de salaire d'acceptation baisse.

Ces prévisions sont d'ailleurs confirmées par les vérifications empiriques qu'on a faites tant chez les hommes que chez les femmes: le salaire escompté élève le salaire d'acceptation et les coûts de la recherche l'abaissent. En d'autres termes, les individus se comportent comme s'ils avaient une idée du taux de salaire d'acceptation. Cette constatation indique que le comportement de ces individus en chômage est caractérisé par la recherche d'un emploi meilleur plus que par la recherche d'un emploi quelconque. Étant donné le taux de salaire qu'ils espèrent obtenir, les individus exercent un certain contrôle sur la durée de leur chômage. Si la durée du chômage était entièrement fonction de la disponibilité des emplois, il y aurait un rapport significatif entre le salaire d'acceptation et le salaire escompté et, d'autre part, l'on n'aurait pas noté le coût de la recherche de travail. Ainsi, les résultats obtenus laissent-ils voir qu'une part du chômage au moins est attribuable aux délais dans l'acceptation d'un emploi.

Pour ce qui est de la flexibilité, on a constaté que le salaire d'acceptation décroît à mesure que la durée du chômage augmente. Cependant, cette flexibilité à la baisse est très faible — la baisse étant d'à peine .12 pour cent par mois (en termes réels). Si le salaire d'acceptation était de \$120.00 par semaine (en termes réels au début de la période de recherche), il déclinerait (pour une moyenne de 24 semaines) de .72 pour cent ou, approximativement, de \$1.00, ce qui est vraiment un très faible déclin. On note un degré plus marqué de flexibilité à la baisse si on considère des travailleurs dont les salaires sont plus élevés (une rémunération supérieure à \$150.00). Pour les hommes, elle est de .36 pour cent par mois et pour les femmes de .80 pour cent par mois. Pour les travailleurs dont le salaire est plus bas (des salaires inférieurs à \$150.00 par semaine), le degré de flexibilité n'est pas significatif. Les résultats indiquent aussi que, pour les travailleurs syndiqués, il y a un déclin quelque peu plus prononcé du salaire d'acceptation (.20 pour les hommes et .16 pour les femmes) que pour les travailleurs non syndiqués pour qui le déclin est sans signification. On a également découvert qu'un mauvais climat économique, marqué par des taux de chômage élevés, s'accompagne de taux de déclin plus forts.

# Reservation Wages in Canadian Labour Markets

Abrar Hasan  
and  
Surendra Gera

*Job search theory has been offered in recent years as one explanation of unemployment. A key element of the theory requires that workers behave as if they operate on a reservation wage strategy. The authors verify this hypothesis.*

Recent theoretical developments have emphasized the voluntary nature of unemployment<sup>1</sup>. One paradigm, that of search theory, uses imperfections in the labour markets to argue that search for labour market information constitutes a productive activity<sup>2</sup>. Individuals can increase their utility, income or wealth by engaging in search unemployment if the returns to search are positive. This argument has been used as an explanation of both the incidence (frequency) of unemployment spells and their duration. Some search theorists go so far as to suggest that all unemployment is voluntary in nature<sup>3</sup>. In addition to this extreme view, the search theoretic approach to

---

\* HASAN, A. and S. GERA, Economic Council of Canada, Ottawa, Canada.

\*\* The findings of this paper are the personal responsibility of the authors and, as such, have not been endorsed by Members of the Economic Council of Canada. The authors would like to express their thanks to David Henderson, Keith Newton, Sylvia Ostry, Robert Jenness and Dan Rayan (U.S. Department of Labour) who commented on an earlier version of the paper which was presented at the Western Economic Association Meetings, Las Vegas, June 17-22, 1979. We are also thankful to the editors of this Journal and to an anonymous referee for a number of useful suggestions. The authors alone are, of course, responsible for any remaining errors.

1 This view is best exemplified by various contributions in PHELPS, E.S., (ed.), *Microeconomic Foundations of Employment and Inflation Theory*, W.W. Norton, New York, 1970.

2 Much of this work stems from the seminal articles by STIGLER, George J., "The Economics of Information", *Journal of Political Economy*, Vol. 69, No. 3, June 1961, pp. 213-225, and "Information in the Labour Market", *Journal of Political Economy*, Part II, Vol. 70, No. 5, October 1962, pp. 94-105.

3 See for example ALCHIAN, A.A., "Information Costs, Pricing and Resource Unemployment", and LUCAS, Robert E., Jr. and RAPPING, Leonard A., "Real Wages, Employment and Inflation", in PHELPS (ed.), *Microeconomic Foundations of Employment and Inflation Theory*, W.W. Norton, New York, 1970, pp. 27-52.

unemployment itself has come in for serious criticism<sup>4</sup>. How much of the unemployment is attributable to productive search activity is a matter of considerable theoretical as well as policy importance and the debate cannot be resolved on purely theoretical grounds. Yet only limited empirical work is available in literature and none pertains to Canada.

According to the search theory, once unemployed, an individual tailors his duration of unemployment in accordance with the marginal calculus of expected returns and expected costs of additional search. The resulting duration of unemployment, although optimal for the individual, also represents costs both to the individual and to the society. What amount of search is optimal for an individual becomes an important policy issue because the distribution of benefits and costs from search between the individual and the society is affected by government action. Search costs to the individual and the society are affected by government action. Search costs to the individual are lowered by a number of government programs, such as unemployment insurance, mobility grants, training, placement services, etc. For a large percentage of the unemployed individuals, especially those at the lower end of the wage spectrum, UI payments replace a large fraction of their normal wages. This heavy subsidization of search costs has two effects: on the one hand, it induces individuals into unemployment and lengthens their duration of search; on the other hand, better job matching may result in less frequent spells of unemployment. The net effect of these two forces on the rate of (frictional) unemployment is an empirical issue. The questions then arise as to the amount of investment a society should make in the provision of labour market information as opposed to investment in training, mobility and job creation; and what form this subsidization should take.

## OBJECTIVES OF THE PAPER

In this paper we investigate the wage-setting behaviour of individuals — or how workers frame their wage demands in the face of economic stimuli. In the language of search theory, this translates into the question whether unemployed individuals behave as if they employ a reservation-wage (RW) strategy, which involves equating the marginal cost and returns of extra search. The primary objective of this paper is to examine whether

---

<sup>4</sup> Most of these criticisms were first voiced by TOBIN, J., "Inflation and Unemployment", *American Economic Review*, Vol. 62, No. 1, June 1972, pp. 1-18. See also GORDON, Robert J., "The Welfare Cost of Higher Unemployment", *Brookings Paper on Economic Activity*, 1973, No. 1, pp. 133-195.

jobseekers behave as if they employ a RW strategy. Since the search theory attempts to portray voluntary behaviour of jobseekers, we test this theory with the help of data on unemployment spells which began as a result of voluntary quit decisions on the part of jobseekers.

A second objective of this paper is to determine how flexible RW is over the period of unemployment. An inflexible RW implies that jobseekers do not see fit to moderate their wage demands as the duration of unemployment increases. Rigidity in wage demands has been recognized, since the days of classical economists, as a major factor causing unemployment. In recent years, social assistance programs have been criticized for their contribution to inflexibility in workers' wage demands<sup>5</sup>. Some empirical evidence is available, to suggest that reservation wages fall as unemployment is prolonged. However, most of this work is not rooted in search theoretic methodology<sup>6</sup>.

Moreover, limitations of data have prevented most of the empirical work from considering the effect of a number of key labour market characteristics which are known to be important determinants of wage flexibility. In recent years, theories of dual labour markets and market segmentation have been put forth and, although much work remains to be done on theoretical level, the existence of different labour markets, with only weak mobility among them, is widely accepted. The "new unemployment" literature, for example, has emphasized that for major groups of unemployed individuals the available jobs are neither appealing in themselves nor rewarding as pathways to better jobs in future<sup>7</sup>. The behaviour of RW for these individuals could be different from individuals who form part of what is described as the primary labour market<sup>8</sup>. In this paper, the wage-setting behaviour of low-wage workers is examined separately from the high-wage workers and unionized workers are isolated from the non-unionized. Demand conditions in the labour markets is another factor which is explicitly introduced — it is hypothesized that workers' expectations would vary with different demand conditions and further that workers would differ among themselves in the perception of market conditions.

---

5 FELDSTEIN, M.S., "Lowering the Permanent Rate of Unemployment", *Joint Economic Committee*, (Washington, Government Printing Office), 1973.

6 MALHOTRA, Suresh, "Job Search Behaviour: An Empirical Analysis of Unemployment Duration", Ph.D Dissertation, University of Washington, 1976.

7 FELDSTEIN, M.S., "The Economics of New Unemployment", *The Public Interest*, No. 33, Fall 1973, pp. 3-42.

8 DOERINGER, Peter and PIORE, Michael, *Internal Labor Markets and Manpower Analysis*, Lexington (Mass.) Heath, 1971.

## THEORETICAL FRAMEWORK AND ESTIMATION MODEL

In order to maximize the benefits from search, an individual jobseeker must decide when to stop searching. Standard search models purport to show that this maximization of income (utility or wealth) problem can be solved by setting up a reservation wage (RW) such that wage offers (W) below the RW are rejected while any offer equal to or above the RW is accepted:

$$\begin{array}{ll} W \geq RW & \text{accept any offer} \\ W < RW & \text{reject all offers} \end{array} \quad (1)$$

The RW itself is obtained by equating the marginal (expected) gain to the marginal (expected) cost of search. The marginal gain is derived from the wage offer distribution  $F(W)$ , which is assumed to be known to the searcher, is given exogenously and is stationary. The  $F(W)$  depicts the mean and the standard deviation of the distribution of possible wage offers facing the individual. The individual is also assumed to know the cost of search, which consists of two elements: earnings foregone during the period of search represent the indirect element while costs of filing applications, transportation, etc., represent the direct cost of search. Both the marginal gain and marginal cost are viewed net of the discount factor. RW in the functional form can be specified as:

$$RW = f(F(W), C) \quad (2)$$

The underlying search theoretic hypotheses are that the RW will adjust upward as search costs fall, as the expected value of wage offer rises, or as the dispersion in the wage offer distribution increases.

Unfortunately equation (2) cannot be estimated directly because the RW is not itself observable. However, the wage offer  $W_t$  actually accepted in period  $t$  is known. Since the restriction  $W \geq RW$  is placed on  $W_t$  then, in principle, it should be possible to approximate the RW<sup>9</sup>. To pursue this approach, let us assume that the expected value of wage offers facing an individual  $i$  at time  $t$  is:

$$E(W_{it}) = X'_{it}\beta \quad (3)$$

where, for each individual  $i$ ,  $E(W)$  is the expected value of wage offer accepted at time  $t$ ,  $X'$  is a vector of searcher's productivity characteristics and labour market conditions.

<sup>9</sup> KIEFER, Nicholas M. and NEUMANN, George R., "An Empirical Job Search Model, With a Test of the Constant Reservation-Wage Hypothesis", *Journal of Political Economy*, Vol. 87, No. 11, 1979, 87(1), pp. 89-107.

Let the RW function be given as

$$RW_{it} = Z'_{it}\gamma + \epsilon_{it}^R \quad (4)$$

with  $\epsilon_{it}^R$  i.i.d. $N(0, \sigma_R^2)$ . The vector  $Z'_i(t)$  contains the worker and labour market characteristics. From (2) and (3) we have

$$E(RW_{it}) = f(X'_{it}\beta, C) = Z'_{it}\gamma \quad (5)$$

Equation (5) would require, then, that all elements of  $X'$  be contained in  $Z'$ . Now, in order to provide identification, it is necessary that some elements of  $X'$  affect reservation wages solely through their effects on wage offers. For this reason we define

$$X_{it} = (X_{it}^j, X_{it}^{jc}) \quad (6)$$

$$\text{and } Z_{it} = (X_{it}^j, X_{it}^c, X_{it}^{jc}) \quad (7)$$

where  $X^j$ 's are those variables which enter in the determination of  $F(W)$  but *not* in the determination of  $C$ ;  $X^{jc}$ 's affect *both*  $F(W)$  and  $C$ ; and  $X^c$ 's are elements of  $C$  but *not* of  $F(W)$ .

In view of these considerations we can use observations on wage offers actually accepted to estimate the RW function. We do this in two steps. First, a wage offer function,  $W_i$ , is estimated, in which the arguments are  $X^j$  and  $X^{jc}$ :

$$W_i = g(X_i^j, X_i^{jc}) \quad (8)$$

where  $W_i$ 's is the wage offer accepted by individual  $i$  in the sample. The second stage would then consist of the estimation:

$$RW_i = h(\hat{w}_i, X_i^{jc}, X_i^c) \quad (9)$$

where  $\hat{w}_i$ 's are estimated values from equation (8) and  $X_i^{jc}$ ,  $X_i^c$  retain their previous designation.

### Reservation Wages and Duration of Unemployment

We now proceed one step further and inquire how individuals adjust their wage setting behaviour, i.e., their reservation wages, as the duration of search (unemployment) lengthens. Do individuals increase, reduce or keep their reservation wages constant over the duration of search?

Any one of these three options are theoretically feasible under different sets of assumptions. For example, if, as the result of search, an individual discovers that the wage offer distribution has a higher mean than expected, then the RW will rise. This possibility has been suggested by Sant (1977).

RW would be constant under the assumption of infinite horizon, knowledge of wage offer distribution, and lack of capital constraints. Declining reservation wages may arise if a finite time horizon assumption is introduced. Thus the issue is clearly an empirical one.

In order to examine this issue we introduce, in equation (5), the duration of search (D) as a catch-all term to capture the effect of duration of unemployment in equation. This equation now becomes:

$$E(RW_{it}) = Z'_{it}\gamma + g \cdot D_{it} \quad (10)$$

### Estimation Equations

From the foregoing discussion we can now derive the equations which are suitable for estimation. These equations may be written as:

#### *Wage Offer Function*

$$\log W_t = \sum_m a_m X_m^j + \sum_p a_p X_p^{jc} + e^w \quad (11)$$

#### *Constant Reservation Wage Function*

$$\log RW_t = b_1 \hat{w} + \sum_p b_p X_p^{jc} + \sum_q b_q X_q^c + e^R \quad (12)$$

#### *Variable Reservation Wage Function*

$$\log RW_t = b_1 \hat{w} + \sum_p b_p X_p^{jc} + \sum_q b_q X_q^c + g \cdot D_t + e^R \quad (13)$$

where  $\log W_t$  and  $\log RW_t$  = logarithm of the real (in 1971 dollars) weekly wages

$X_m^j$  = variables which are determinants of wage offer distribution only

$X_p^{jc}$  = variables which are determinants of wage offers as well as cost of the search

$X_q^c$  = variables which determine cost of search only

$D_t$  = duration of search

$a, b$  = coefficients, and

$e^w, e^R$  = disturbance terms.

Consider now the determinants of wage offers in equation (11)<sup>10</sup>. The

---

<sup>10</sup> A complete list of all the variables and their definitions is provided in Appendix A-1.

log of real weekly wages in time  $t$  is used as the dependent variable<sup>11</sup>. The subsets identified by  $X^J$ , and  $X^{JC}$  include all the variables which affect the wage offer function but exclude  $X^C$  i.e., variables which affect cost of search only. The wage offer distribution that an individual faces may be said to depend on: (a) state of the labour market and (b) human capital characteristics of the individual.

The labour market conditions are captured by a set of dummy variables, PROVINCE, denoting the province in which the jobseeker is located. It is assumed that, on balance a tighter labour market would imply higher wage offers relative to slack markets. Due to the differing nature of the structural and seasonal patterns of the economy across the provinces, we do not assign any expectations for the sign of the coefficients relative to the omitted province, British Columbia. The dummies are used as control variables to capture locational differences.

Consider now the variables INDUSTRY, OCCUPATION, and UNIONIZATION. These variables provide an indication of labour markets in that the mean wage values differ by industry, occupation and union. However, these same variables also influence productivity characteristics of an individual. Similar reasoning suggests that searching over different industries, FLXINDUS, or over different occupations, FLXOCCUP, would be an element in determining wage offers. By broadening the market being searched FLXINDUS is likely to be positively associated with wage offers. FLXOCCUP, on the other hand, may exert a negative effect since transfer of human capital from one occupation to another may be costly.

An individual's market productivity characteristics are captured by a number of variables such as EDUCATION, TRAINING, AGE, REASON-QUIT (reason for job leaving) and PRE-WAGE (past wages). The relevance of the first three is obvious. EDUCATION is likely to be positively associated with wage offers, as would be the case with TRAINING and AGE. There may be some non-linearities in AGE which are captured in the model by introducing  $(AGE^2)$ . To account for causal interaction between age and education a term AGE x EDUCATION is introduced. One indicator of a person's labour market productivity is his past wages (PRE-WAGE). It is likely to be positively correlated with the post-unemployment wages<sup>12</sup>.

---

11 The logarithmic form of the function is preferred for empirical estimation purposes for several reasons. The log form yields better statistical fits than unlog form, and the distribution of log of wages is less skewed than the distribution of actual wages.

12 See WELCH, Finis, "What Have We Learned from Empirical Studies of Unemployment Insurance", *Industrial and Labour Relations Review*, Vol. 30(4), July 1977, pp. 451-461.



REASONQUIT needs a word of explanation. Our data permit differentiation among four types of quits: quitting for family reasons, job dissatisfaction, return to school and others. The last category is omitted in a dummy variable set up. The hypothesis is that job dissatisfaction would indicate a positive correlation with wage offers as compared with the omitted category, whereas job leaving for family reasons would exert a negative impact.

Finally, three variables are introduced as controls. Whether an individual is willing to accept a pay cut (FLXWAGE) is a signal to the employers. This willingness should have a negative impact on wage offers. On-the-job search (ONSEARCH) is another variable of interest, and one that has been neglected in the search literature. In our sample, some individuals quit after beginning their search on the job while others quit first and then search. We hypothesize that, *ceteris paribus*, those who have searched on the job should be better informed about the job market and are therefore likely to exert a positive influence on expected wage offers. Tenure on the last job (JOBTENURE) is another control variable. It is assumed that longer tenure is likely to send a positive signal to the employer thereby improving the value of wage offers.

Equation (12) and (13) estimate the constant and declining reservation wage models. The variables of primary interest are the ones which enter  $X^C$ , i.e., variables which affect costs but *not* wage offers, and  $\hat{w}$ , the expected value of wage offers estimated from equation (11). Other variables enter as part of  $X^{JC}$  and have already been described above.

Variables in the  $X^C$  set measure the financial burden unemployment is likely to impose on an individual. The variable MARITAL controls for the marital status of jobseeker and has an ambiguous sign on *a priori* basis as presence of a spouse does not imply presence of a dependent. The variable FAMILY SIZE provides a more direct indication of financial responsibilities and has been used as a proxy for discount rates. Given the size of assets searchers with larger families are expected to discount returns from search at a higher rate<sup>13</sup>. An individual who has a part-time job during unemployment (FLXPART) can afford to wait longer and therefore set up a higher reservation wage. FLXPART is included to capture this phenomenon. Non-wage income can take a number of forms, income from spouse (SPOUSEY), savings (SAVINGS), and other income sources (OTHERY). Each of these should have a positive impact on RW. Ideally, it is the ex-

<sup>13</sup> See SCHMIDT, Ronald W., *The Determinants of Search Behaviour and the Value of Additional Unemployment*, Working Paper Series No. 7429, Graduate School of Management, University of Rochester, September 1974.

pected value of *SPOUSEY* and *OTHERY* that matter. However, in the absence of such data we use the actual values. Tenure on the next job (*NXEMP*) is another variable of some interest. The longer an individual expects to work on the next job the more cautious he will be in setting up his reservation wages. One adjustment to not finding a job is to lower one's expectations regarding the relative permanence of next job (Stephenson, 1976). An unemployed individual having spent some time in job search may, as a stop-gap measure, lower his RW and accept a low-pay job, and compensate for it by reducing the expected tenure.

## THE DATA

Our data are drawn from the 1978 Labour Force Tracking Survey developed by Canada Department of Industry, Trade and Commerce. This Survey covers individuals from selected communities who were laid off or who voluntarily left their jobs as a result of a plant shutdown or a cutback in production. Survey teams gathered the list of such individuals from specific employers within designated localities and an attempt was made to contact each individual on the list. From the individuals contacted information was sought concerning their employment/unemployment records for the last five years, from 1973 to the cutoff date in summer 1978. The data relate to all completed unemployment episodes, single or multiple, as the case may be. Each episode contains information on pre- and post-unemployment wages, selected personal and human capital characteristics and motivational and financial attributes of the individual and some characteristics of the household to which he/she belongs. The sample is further restricted to unemployment episodes which began when individuals quit their job. When the data for all the years are pooled together, the total sample consists of 2,852 observations out of which 1,975 relate to male workers and 877 to female. Sample means are given in Appendix A-2.

Two limitations of the data should be noted. First, the sample based on plants experiencing major layoffs or shutdown may not, of course, be representative of Canadian work force. This limitation is mitigated somewhat by inclusion in the sample of unemployment/employment history of the past five years. A second limitation of the sample is that it is also potentially affected by the contact rate. Highly mobile individuals, especially those who move out of the communities surveyed, are likely to dominate the individuals who could not be contacted.

## RESULTS AND THEIR DISCUSSION

### Wage Offer Function

As a first step in estimating RW, the wage offer function using equation (11) is estimated and the results obtained are presented in Table 1. A large number of variables included in the equation are significant, especially for males. A number of other researchers have estimated wage offer functions<sup>14</sup>. However, our specification incorporates certain novel features which deserve mention. FLXWAGE, the willingness to accept lower wages, is used as an explanatory variable. This variable could capture jobseekers' prior beliefs about the wage offer distribution. Search theory assumes that wage offers are exogenously given to individuals. This assumption is better approximated if we hold constant the influence any individual-market dynamics may have. Individuals willing to accept a wage cut do end up receiving lower wages, possibly by revealing their expectations.

Wage flexibility is only one response to expectations regarding market opportunities. Another response could be to cast the net wider and extend search to other industries and occupations. FLXOCCUP, or search extending to other occupations in addition to one's own may, however, involve a loss from non-transferability of occupation-specific human capital. The negative coefficient we obtain for FLXOCCUP, on this interpretation, could measure the loss of human capital involved in embarking on a new occupation. FLXINDUS, on the other hand, representing search in other industries need not entail such a loss. In fact, by adding to the variability of wage offers, searching among more industries than one, should have a positive effect on wage offers, as we observe to be the case for males.

One-the-job search (ONSEARCH) is a much neglected aspect of labour market search behaviour. In an earlier work we have provided evidence on the magnitude and pervasiveness of this phenomenon in Canadian labour markets<sup>15</sup>. In the wage offer function we find ONSEARCH to be positively related to wage offers. Individuals who search on-the-job prior to becoming unemployed receive, on average, higher post-unemployment wages than those individuals who do not search while employed. Specific-

---

<sup>14</sup> See HALL, Robert, "Wages, Income and Hours of Work in the U.S. Labour Force", in WATTS and CAIN, (eds.), *Income Maintenance and Labour Supply, Econometric Studies*, Institute for Research on Poverty, University of Wisconsin, Madison, 1973, KAHN, Lawrence M., "The Returns to Job Search: A Test of Two Models", *Review of Economics and Statistics*, 40(4), November 1978, pp. 486-503 and KIEFER and NEUMANN, 1979, *op. cit.*

<sup>15</sup> HASAN, A. and GERA, S., *Aspects of Job Search in Canada*, Discussion Paper No. 156, Economic Council of Canada, March 1980.

**TABLE 1**  
**Wage Offer Function (OLS Estimates)**  
**(Standard errors in parentheses)**

	<i>MALES</i>	<i>FEMALES</i>
Constant	-0.760	-0.866
EDUCATION	0.006** (0.003)	0.010* (0.006)
TRAINING	0.012*** (0.002)	0.003 (0.007)
AGE	0.011*** (0.002)	0.008** (0.004)
AGE (SQUARED)	-0.001*** (0.00003)	-0.00006 (0.00004)
AGE x EDUCATION	-0.0002** (0.0001)	-0.0003 (0.0002)
UNIONIZED	0.016** (0.007)	-0.010 (0.012)
JOB TENURE	-0.00001 (0.00001)	-0.000009 (0.00003)
REASONQUIT 1	0.017** (0.007)	0.001 (0.010)
REASONQUIT 2	-0.056 (0.044)	0.018 (0.141)
REASONQUIT 3	0.041*** (0.016)	-0.059 (0.036)
ONSEARCH	0.034*** (0.007)	0.025** (0.011)
FLXWAGE	-0.032*** (0.006)	-0.008 (0.011)
FLXINDUS	0.032*** (0.012)	-0.016 (0.020)
FLXOCCUP	-0.007*** (0.012)	0.003 (0.020)
LOG PRE-WAGE	0.301*** (0.021)	0.328*** (0.038)
<i>OCCUPATION</i>		
Managerial	-0.006 (0.021)	0.065 (0.038)
Clerical	-0.006 (0.020)	0.029 (0.030)
Sales & Services	-0.023 (0.018)	0.046 (0.032)
Primary	0.056*** (0.019)	-0.075 (0.070)
Processing	-0.019 (0.017)	0.013 (0.029)
Machining	0.013 (0.019)	0.078** (0.033)

TABLE 1 (Cont'd)

	<i>MALES</i>	<i>FEMALES</i>	
Fabricating	-0.013 (0.017)	0.006 (0.028)	
Construction	-0.006 (0.019)	0.017 (0.054)	
Transportation	0.011 (0.018)	0.026 (0.038)	—
<i>INDUSTRY</i>			
Manufacturing	0.005 (0.010)	0.012 (0.020)	
Construction	0.061*** (0.015)	0.064 (0.075)	—
Transportation	-0.006 (0.017)	-0.085 (0.060)	
Trade & Finance	0.029** (0.013)	-0.008 (0.019)	
<i>PROVINCE</i>			
Newfoundland	-0.076*** (0.022)	0.017 (0.143)	
New Brunswick	-0.109*** (0.022)	-0.114*** (0.037)	
Quebec	-0.082*** (0.012)	-0.109*** (0.030)	
Ontario	-0.055*** (0.014)	-0.044 (0.030)	
Manitoba	-0.062*** (0.020)	-0.096*** (0.046)	
<hr/>			
R <sup>2</sup>	.34	0.27	
R <sup>2</sup>	.33	0.24	
No. of Observations	1975	877	

\* Significant at 10 per cent level (two-tail test).

\*\* Significant at 5 per cent level (two-tail test).

\*\*\* Significant at 1 per cent level (two-tail test).

ly, on-the-job search contributed to 3.4 per cent higher wage for males and 2.5 per cent for females.

Other interesting results from Table 1 may be noted parenthetically. The contribution of education is positive as expected and the coefficient attains statistical significance, more so for males. Years of training are significant only for males. Their insignificance for females may arise partly from their low levels for females (see Appendix A-2) and partly from the nature of secondary labour markets where women predominate. Labour market conditions denoted by the set of provincial dummies are highly significant, especially for males. One surprising result that defies easy explanation is that occupational dummies do not attain statistical significance.

### Constant Reservation Wage Function

Using the estimated values from the wage offer function, the constant RW model is estimated and the results are presented in Table 2 for males and females in columns (1) and (3) respectively. In the present context the variables of primary interest are the ones which enter  $X^c$ , i.e., variables which affect costs but *not* wage offers, and  $\hat{w}$  the expected value of wage offers. The search theoretic hypothesis is that  $\hat{w}$  should be positively related to the reservation wage while anything that raises cost of search should have a negative sign.

The results presented in Table 2 support search-theoretic expectations. The expected wage variable,  $\hat{w}$ , exerts a highly significant effect on reservation wages and as expected, its impact is positive. As explained earlier, the cost side is captured by a number of variables representing financial burden imposed by unemployment. Almost all the variables operate in the expected direction. Being married serves to raise the RW for males, as it does for the females but for the latter the relationship is not significant. FAMILY SIZE (per earner) also has a positive impact and, in this instance, the relationship is significant for females but not for males. An individual who has a part-time job during unemployment (FLXPART) can afford to wait longer and set up a higher reservation wage. This is supported by the positive coefficient for FLXPART. Non-wage income can take a number of forms: income from spouse (SPOUSEY), savings (SAVINGS), and other income sources (OTHERY). Each of these should have a positive impact on RW. Our results indicate that the availability of savings raises the RW for males but in the case of women the relationship is insignificant. For females this effect is perhaps captured by the variable "other income" (OTHERY) which is statistically significant and has a positive impact on RW. Finally, we find a positive relationship between RW and tenure as expected.

**TABLE 2**  
**Constant Versus Variable Reservation Wage Models**  
**OLS Estimates**  
**(Standard Error in Parentheses)**

	<i>Males</i>		<i>Females</i>	
	<i>Constant Reservation Wage Function (1)</i>	<i>Variable Reservation Wage Function (2)</i>	<i>Constant Reservation Wage Function (3)</i>	<i>Variable Reservation Wage Function (4)</i>
Constant	-.018	.025	-.06	-.045
EDUCATION	-.004 (.003)	-.004 (.003)	-.0007 (.006)	-.0009 (.006)
TRAINING	-.002 (.002)	.0004 (.002)	-.007 (.007)	-.005 (.007)
AGE	-.002 (.003)	-.002 (.003)	.002 (.004)	.001 (.004)
AGE (SQUARED)	.00001 (.00003)	.00001 (.00003)	-.00003 (.00005)	-.00003 (.00005)
AGE x EDUCATION	.00009 (.00011)	.00009 (.0001)	.0001 (.0002)	.0001 (.0002)
UNIONIZED	-.008 (.006)	-.007 (.006)	-.006 (.009)	-.001 (.009)
REASONQUIT 1	-.003 (.006)	-.004 (.006)	.007 (.009)	.004 (.009)
REASONQUIT 2	.002 (.042)	.003 (.042)	-.098 (.135)	-.097 (.135)
REASONQUIT 3	-.012 (.016)	-.012 (.016)	-.026 (.034)	-.028 (.034)
ONSEARCH	.0006 (.007)	.001 (.007)	.0009 (.011)	-.000009 (.010)

TABLE 2 (Cont'd)

	<i>Males</i>		<i>Females</i>	
	<i>Constant</i>	<i>Variable</i>	<i>Constant</i>	<i>Variable</i>
	<i>Reservation Wage</i>	<i>Reservation Wage</i>	<i>Reservation Wage</i>	<i>Reservation Wage</i>
	<i>Function</i>	<i>Function</i>	<i>Function</i>	<i>Function</i>
	(1)	(2)	(3)	(4)
FLXWAGE	.004	.004	.004	.002
	(.006)	(.006)	(.010)	(.010)
FLXINDUS	.003	.003	-.002	-.0008
	(.012)	(.012)	(.018)	(.018)
FLXOCCUP	-.003	-.003	.011	.010
	(.012)	(.012)	(.018)	(.018)
<i>PROVINCES</i>				
Newfoundland	-.005	.010	-.090	-.090
	(.022)	(.022)	(.138)	(.140)
New Brunswick	-.017	.015	-.020	-.011
	(.022)	(.022)	(.037)	(.040)
Quebec	-.014	.011	-.030	-.027
	(.013)	(.013)	(.029)	(.030)
Ontario	-.004	.003	-.041	-.035
	(.014)	(.014)	(.027)	(.027)
Manitoba	-.008	.009	-.021	-.025
	(.006)	(.020)	(.050)	(.045)
MARITAL	.015*	.014*	.0001	.0001
	(.008)	(.008)	(.014)	(.014)
FLXPART	.013	.016	.014	.0180
	(.011)	(.011)	(.017)	(.020)
FAMILY SIZE	.0005	.0002	.009***	.009***
	(.003)	(.003)	(.003)	(.003)
SPOUSEY	.0003	.0007	-.022	-.018
	(.010)	(.010)	(.013)	(.013)



TABLE 2 (Cont'd)

	<i>Males</i>		<i>Females</i>	
	<i>Constant</i> <i>Reservation Wage</i> <i>Function</i> <i>(1)</i>	<i>Variable</i> <i>Reservation Wage</i> <i>Function</i> <i>(2)</i>	<i>Constant</i> <i>Reservation Wage</i> <i>Function</i> <i>(3)</i>	<i>Variable</i> <i>Reservation Wage</i> <i>Function</i> <i>(4)</i>
SAVINGS	.018*** (.007)	.018*** (.007)	.001 (.010)	.003 (.010)
OTHERY	-.015 (.011)	-.013 (.011)	.021 (.016)	.021 (.016)
NXEMP	.0005*** (.00007)	.0005*** (.00007)	.0005*** (.0001)	.0005*** (.0001)
$\hat{w}$	.972*** (.046)	.966*** (.046)	.824*** (.080)	.823*** (.080)
D	...	-.0003*** (.0001)	...	-.0003*** (.0001)
<hr/>				
R <sup>2</sup>	.37	.37	.29	.30
R <sup>2</sup>	.36	.36	.27	.28
No. of Observations	1975	1975	877	877

\* Significant at 10 per cent level (two-tail test)

\*\*\* Significant at 1 per cent level (two-tail test).

It will be noticed that a number of other variables do not attain statistical significance in the RW equation but are retained as controls. Variables like AGE, TRAINING and EDUCATION, for example, are significant in wage offer equation but not in the reservation wage function. It would appear that they affect RW through their impact on wage expectations,  $\hat{w}$ , rather than directly. In conclusion, the key point to note is that both wage expectations ( $\hat{w}$ ) and several variables representing cost side are statistically significant.

### Reservation Wages and Duration of Unemployment

We now turn to the issue of flexibility of RW with respect to the duration of unemployment. Estimated coefficients for this model are presented in Table 2 for males and females in columns (2) and (4) respectively. These results are examined in relation to the constant reservation wage model (columns (1) and (3)). Most of the coefficients exhibit little change between the two models. In other words, inclusion of the duration variable does not affect the stability of other coefficients, which provides support to our specification. Our results suggest that reservation wage declines .03 per cent per week (in real terms) for both males and females. This translates into a monthly decline of .12 per cent. If the RW was \$120 (in real terms) per week at the start of the search period then it would decline (for an average duration of 24 weeks) by .72 per cent or approximately \$1, clearly a very small decline. Thus even though the RW is flexible, this flexibility is extremely small in our sample and, as we explain below, it may be due to the high floor set by income replacement measures.

Empirical research has, by and large, supported the notion of RW declining with the length of unemployment. However, a wide variety of results have been reported. Stephenson (1976) found a decline of 0.06 per month compared with 0.38 reported by Kasper (1967), 1.25 Fishman, et al. (1968) and 2.38 for Barnes (1975)<sup>16</sup>. For a variety of reasons, these results are not comparable to ours. First, excepting Stephenson, the definition of reservation wage used by these authors is not the concept implied by the search hypothesis. Second, Kasper, Barnes and Fishman, et al., do not control for many of the economic and demographic factors which are known to affect the cost and returns of search.

---

<sup>16</sup> W.F. BARNES provides three estimates for the first, second and the third month. The figure quoted here refers to the second month. See BARNES, W.F., "Job Search Models, the Duration of Unemployment and the Asking Wage: Some Empirical Evidence", *The Journal of Human Resources*, 10(2), Spring 1975, pp. 230-240.

Stephenson uses the desired concept of a certain wage below which an offer will be rejected, the concept which is also employed by Kiefer and Neumann and in this study. The very low estimate of 0.06 per cent decline per month obtained by Stephenson may be partly due to the fact that his sample of youths is least likely to include individuals with largest relative decline. Our results show that when controlled for other factors RW declines with age. Although this fact says nothing about the rate of decline over the length of unemployment our presumption is that youths have a lower rate of decline as well. Corroborative evidence to this effect is included later in this paper.

Kiefer and Neumann arrive at a rate of decline of 2.5 per cent per month and in comparison our results are considerably lower. A number of reasons explain this disparity. First, our sample is limited to quits. These individuals are likely to be better aware of the labour markets, and must take a calculated risk in leaving their jobs. Consequently their asking wage is likely to decrease less than that of other workers. Other sample differences are also noteworthy. Kiefer and Neumann do not use longitudinal data. Rather, duration of unemployment whether complete or not at a given time are included by them. A second reason may be found in the differences in the UI program applicable in the two samples. Our sample spans a five year period (1973-78) during which time some modifications in the benefit structure and eligibility conditions were introduced. Although UI provisions in the U.S. vary by state, it is by and large true that the Canadian UI system has eligibility requirements that are less stringent and more universal than is the case in the U.S. The benefit rate in Canada is generally higher and the benefit duration entitlement longer. Similarly the treatment accorded the quits is more generous. Consequently the effective value of income replacement through UI is likely to be a larger fraction in the Canadian case, which suggests a lower rate of decline in reservation wages compared with the U.S. situation. Third, there are a number of ways in which our specification is different from Kiefer and Neumann. In particular we allow for non-wage adjustment, part-time work and types of quitting.

The major conclusion to emerge from the above is that individuals do respond to wage expectations and to costs of unemployment. They appear to balance these factors in a way which suggests that they are following a reservation wages strategy. Hence a portion of variation in the unemployment duration is explained by search-theoretic considerations, i.e., an employment opportunity is accepted only if it is optimal. Employment-acceptance friction, therefore, is an important part of the observed unemployment.

These conclusions hold for both males and females. The fact that our sample is drawn from communities where major layoffs had occurred strengthens the importance of our conclusion: support for search-theoretic explanations in markets where average duration of unemployment is high (24 weeks for males and 35 for females) is reassuring. This length of unemployment is not usually considered to be of the frictional variety.

### **Impact of Labour Markets and Demand Conditions**

Underlying the empirical results presented above is the assumption that, except for the factors explicitly held constant in the regression equations, the individuals in the sample are statistically equivalent in the sense that they are sampling from a given wage offer distribution and facing similar cost conditions. The validity of this assumption is greater the more homogeneous the sample. If we could construct more homogeneous subsamples from our data we may find that the observed decline in RW may differ among them.

One classification of workers is according to the labour market in which they operate. While the theories of dual labour market and market segmentation have not received unqualified acceptance as theoretical paradigms, the notion is commonly accepted that there do exist widely different labour markets among which the mobility of labour is severely restricted. It is believed by many that low-wage workers move from one dead-end job to another without much hope for an earnings improvement<sup>17</sup>. This suggests that wage dispersion for low-wage workers may be small. The impact of social legislations, such as the minimum wages is to truncate the lower end of wage distribution. The more important effect of these legislations, however, is to set lower limits on the cost of undertaking (unemployed) job search. UI benefits, for instance, provide such a floor. The point to note is that the impact of UI is not the same for low and high-wage workers. The ceiling on the maximum insurable earnings means that the effective replacement ratio is lower as wage levels exceed this ceiling. These considerations suggest that both on the demand side (wage dispersions) and on the cost side (cost of searching) there are significant differences between high and low-wage workers. Hence the behaviour of RW over duration of search will exhibit differences for these groups. As an extreme case, workers at the minimum wage cannot, obviously, lower their asking wages below that floor.

---

<sup>17</sup> FELDSTEIN, M.S., "Lowering the...", *op. cit.*

Unionization provides another delimiting criterion among different markets. A labour market where workers are organized may differ significantly from a non-unionized labour market. Part of the differences may be in terms of wage levels and structure, and product markets may also vary. For these reasons the search strategy employed by a union worker may differ from the non-unionized individuals. Some unionized workers may have the call back to work rights and others may not. The behaviour of these two groups may be different<sup>18</sup>. However, our sample is restricted to quits only and our results will not therefore be affected by this distinction.

A third feature along which labour markets may be distinguished is provided by demand conditions. The mean of wage offer distribution is likely to vary with cyclical changes, increasing under buoyant conditions and decreasing when demand is slacking off. To the extent that individuals do not foresee perfectly the expected changes in market demand conditions their observed RW behaviour will be affected. Moreover, risk averse individuals are likely to respond in manners different from risk-lovers. The former group will exhibit greater flexibility in RW.

The impact of these three labour market features is examined on the flexibility of RW and the results are reported in Table 3. We segregate the total sample into different wage groups, into union-non-union categories and by different rates of unemployment at the start of the unemployment spell.

Looking at panel A we observe that low-wage workers, whether male or female, tend to exhibit less flexibility in wage demands compared with the higher wage groups. There are a number of interrelated reasons why high-wage workers are likely to exhibit greater RW flexibility. First, UI and other social compensations to high-wage workers leave uncompensated a larger part of wage income than is the case for low-wage workers. Second, the rate of depreciation of human capital is likely to be larger for high-wage earners. Third, since the low-wage earners are concentrated in the secondary labour market their wage expectations are not high to begin with. These expectations are, therefore, unlikely to be much modified by increasing duration of unemployment. Finally, low-wage workers at or near the minimum wage have little room to exhibit a decline in their wage demands.

In panel B, unionized workers exhibit a greater decline in reservation wages than do non-unionized individuals. A number of explanations suggest themselves. Clearly, the behaviour of reservation wages of unionized *unemployed* workers is quite a different issue than the behaviour of wages

---

<sup>18</sup> The authors are thankful to the editors for suggesting this point.

of unionized *employed* individuals. Rigidity in the wage demands for the latter does not imply similar behaviour for the former group. The greater flexibility in RW of unionized workers reported in panel B can be explained by factors operating on the demand as well as on the supply side of the market. Consider the supply side first: non-union workers are low-paid relative to the unionized workers; in our sample the difference is about 20 per cent. We have seen above that, for the reasons already mentioned, low-paid workers exhibit a lower rate of decline. Both the minimum wage and UI payments act as a floor and there is less of a margin for the decline of asking wages. The demand side of the market may be reflected in the union preference function<sup>19</sup>.

**TABLE 3**  
**Percentage Change in RW (in Real Terms) Over an**  
**Additional Week of Duration of Unemployment by:**

<i>A. Wage Groups</i>		
<i>Real Wage</i>	<i>Males</i>	<i>Females</i>
\$100 or less	Insignificant	- .04***
\$101-150	- .06***	Insignificant
\$151 and up	- .09***	- .2***
<i>B. Unionization Status</i>		
<i>Unionization</i>	<i>Males</i>	<i>Females</i>
Unionized	- .05***	- .04***
Non-Unionized	Insignificant	Insignificant
<i>C. Unemployment Rates</i>		
<i>U-rates</i>	<i>Males</i>	<i>Females</i>
less than or equal to 7.0	- .04**	Insignificant
7.1 to 8.0	- .05*	Insignificant
8.1 to 9.0	Insignificant	- .14***
9.0	- .07*	- .17***

\* Significant at the 10 per cent level

\*\* Significant at the 5 per cent level

\*\*\* Significant at the 1 per cent level.

<sup>19</sup> CARTTER, Allan M., *Theory of Wages and Employment*, Richard D. Irwin, Chicago, 1959.

A union can be an employment- or a wage-maximiser. For a wage maximizing union, those individuals who happen to be laid off get the worst of both the worlds. The union is unwilling or unable to help them find a job. Since, their pre-unemployment wages have been bid high, once unemployed, they have to reduce their asking wages that much more. This message sinks in as the duration of unemployment lengthens. This result is also in the spirit of the contract theory, which holds that worker-employer contracts, implicit on the part of individual workers but explicit in the case of unions, tend to insure wage stability at the cost of fluctuations in employment.

We now turn to panel C in Table 3 which reports the decline in RW obtained for markets with different rates of unemployment. In the absence of better proxies these rates are used as cyclical indicators. Search theory would suggest that the mean of wage offer distributions confronting individuals would improve with improving economic conditions, which would suggest higher reservation wages. However, to the extent that these fluctuations are foreseen at the commencement of the search process they should have no effect on the reservation wages. Unanticipated changes in the wage-offer distribution will, of course, lead to changes in RW. From our results it would appear that higher rates of unemployment at the start of the unemployment spell causes risk-averse individuals to dominate the outcome. Alternatively, individuals could become more risk averse in slack markets. In either case, RW declines more than it does in the case of low unemployment rates. The view seems widespread that wage demands are likely to be more flexible under recessionary conditions. We find support for this hypothesis in Table 3. A week of unemployment leads to a greater decline in RW the higher the unemployment rate at the beginning of the process. This proposition holds most clearly for women and may signify a version of the added worker scenario: during cyclical recession women workers may be more flexible in wage demands because they wish to return to work speedily in order to augment family income.

## CONCLUSIONS

This paper has explored the dynamics of wage setting behaviour in Canadian labour markets. If search theoretic explanations provide a reasonable expression of labour market realities, they are likely to be most evident in the case of job leavers. For this reason our sample was restricted to quit cases.

Our results provide evidence of considerable dynamism in labour

market adjustment process. Unemployed workers are shown to be responsive to wage expectations and costs related to job search. Their asking wages (reservation wages) are not set arbitrarily but respond to changing economic circumstances. They are positively related to wage expectations and decrease as the cost of unemployment increases. In responding to changing economic stimuli unemployed individuals behave in a way which is consistent with optimizing behaviour. Consistent with this behaviour, they set their reservation wages and tailor their duration of unemployment to maximize benefits from search.

We find, in addition, a number of other pointers to responsiveness of individuals to labour market conditions. Some 40 per cent of individuals in the sample express a willingness to accept a lower wage — a very high percentage indeed. Jobseekers exhibit other forms of (non-wage) flexibility as well. About 62 per cent of males and 48 per cent of females looked for work in industries in addition to their own. A roughly comparable figure applies to searching in alternative occupations. Adding to indications of responsiveness is the average tenure with previous employers, which turns out to be only slightly longer than two years. We find also that close to one-third of the individuals in the sample engaged in search on the job and that on-the-job search adds about 3 per cent to increases in post-unemployment wages.

Of special interest is the flexibility exhibited by reservation wages as the duration of search increases. We find the RW to decline with lengthening duration. However, the average rate of decline for the sample is very small, only .12 per cent per month, and suggests that wage signals in the labour market work sluggishly. The small flexibility may be partly due to the high income replacement floor provided by the UI benefits. This argument is supported by the fact that high-wage workers exhibit a larger decline than the low-wage workers — the UI being a more important factor for the latter. The higher rate of decline for union workers relative to others can also be explained, in part, by the relatively higher wages of the former. Adding to the evidence on flexibility is the fact that reservation wages decline more when employment conditions worsen. Workers exhibit greater risk-averseness under these conditions.



## APPENDIX A-1

## List of Variables

$W_t$	= Real post-unemployment weekly wage rate (\$1971).
PRE-WAGE	= Real pre-unemployment weekly wage rate (\$1971).
EDUCATION	= Years of schooling.
TRAINING	= Years of training.
INDUSTRY	= A set of five dummy variables representing different industries. The last category 'others' is omitted from regressions.
OCCUPATION	= A set of ten dummy variables representing occupations. The last category 'others' is omitted from regressions.
UNIONIZED	= 1 if union member 0 otherwise.
GPROGRAM	= 1 if participated in a government sponsored training, relocation or welfare program 0 otherwise.
PROVINCE	= A set of six dummy variables; British Columbia is the category omitted from regressions.
AGE	= Actual age in years.
AGE (SQUARED)	= Actual age in years squared.
AGE x EDUCATION	= Interaction variable.
JOBTENURE	= Duration of previous job (prior to the unemployment episode).
REASONQUIT 1	= Quit job for reasons of job dissatisfaction.
REASONQUIT 2	= Retired with or without company pension.
REASONQUIT 3	= Returned to school/training.
REASONQUIT 4	= Other reasons such as fire, maternity, illness or injury, etc. Omitted from regressions.
ONSEARCH	= 1 if looked for job before leaving last job 0 otherwise.
FLXWAGE	= 1 if willing to accept wages lower than at previous job 0 otherwise.
FLXINDUS	= 1 if searched for job both same as and other than previous 0 otherwise.
FLXOCCUP	= 1 if searched for a job both same as and other than previous 0 otherwise.
FLXPART	= 1 if worked part time during the period looking for a job 0 otherwise.

MARITAL	= 1 if married 0 otherwise.
FAMILY SIZE	= Number of dependents divided by the number of earners in the family.
SAVINGS	= 1 if used own savings 0 otherwise.
SPOUSEY	= 1 if used spouse's income 0 otherwise.
OTHERY	= 1 if had other sources of income 0 otherwise.
D	= Weeks looking for work.
NXEMP	= Weeks of employment in the next job.
NLOOKED	= Weeks not looked for a job.

## APPENDIX A-2

## Summary of Sample Mean Values

		MALES	FEMALES
EDUCATION	(years)	9.4	9.7
TRAINING	(years)	0.7	0.3
AGE	(years)	28.5	28.7
UNIONIZED	(%)	52.8	51.8
JOB TENURE	(weeks)	116.7	115.7
ONSEARCH	(%)	32.8	26.3
FLXWAGE	(%)	43.5	39.1
FLXINDUS	(%)	62.1	48.2
FLXOCCUP	(%)	58.8	45.8
D (DURATION)	(weeks)	24.1	35.4
SPOUSEY	(%)	13.6	47.2
SAVINGS	(%)	76.4	69.7
OTHERY	(%)	7.3	8.4
NXEMP	(weeks)	40.6	46.8
MARITAL	(%)	46.0	53.0
FLXPART	(%)	7.0	7.6
FAMILY SIZE	(per earner)	0.6	1.1
W <sub>t</sub> (\$1971)	(weekly)	128.94	90.42

## REFERENCES

- ALCHIAN, A.A., "Information Costs, Pricing and Resource Unemployment", in E.S. Phelps (ed.), *Microeconomic Foundations of Employment and Inflation Theory*, New York, W.W. Norton, 1970, pp. 27-52.
- BARNES, W.F., "Job Search Models, the Duration of Unemployment and the Asking Wage: Some Empirical Evidence", *The Journal of Human Resources*, Vol. 10, No. 2, Spring 1975, pp. 230-240.
- CARTER, Allan M., *Theory of Wages and Employment*, Chicago, Richard D. Irwin, 1959.
- DOERINGER, Peter and Michael PIORE, *Internal Labor Markets and Manpower Analysis*, Lexington, Heath, 1971.
- FELDSTEIN, M.S., "Lowering the Permanent Rate of Unemployment, *Joint Economic Committee*, Washington, Government Printing Office, 1973, 101 pp.
- FELDSTEIN, M.S., "The Economics of New Unemployment", *The Public Interest*, New York, Vol. 33, No. 3, 1973, pp. 3-42.
- FISHMAN, L., J. ALLEN, B. BURGE and C. EATON, *Re-employment Experiences of Defense Workers, A Statistical Analysis of the Boeing, Martin and Republic Layoffs*, Washington, U.S. Arms Control and Disarmament Agency, 1968.
- GORDON, Robert J., "The Welfare Cost of Higher Unemployment", *Brookings Paper on Economic Activity*, Washington, 1973, No. 1, pp. 133-195.
- HALL, Robert, "Wages, Income and Hours of Work in the U.S. Labour Force", in Watts and Cain, (eds.), *Income Maintenance and Labour Supply, Econometric Studies*, Madison, Institute for Research on Poverty, 1973.
- HASAN, A. and S. GERA, *Aspects of Job Search in Canada*, Discussion Paper No. 156, Ottawa, Economic Council of Canada, 1980, 107 pp.
- KAHN, Lawrence M., "The Returns to Job Search: A Test of Two Models", *Review of Economics and Statistics*, Vol. 40, No. 4, November 1978, pp. 496-503.
- KASPER, Herschel, "The Asking Price of Labor and the Duration of Unemployment", *Review of Economics and Statistics*, Vol. 49, No. 3, May 1967, pp. 165-172.
- KIEFER, Nicholas M. and George R. NEUMANN, "An Empirical Job Search Model, With a Test of the Constant Reservation-Wage Hypothesis", *Journal of Political Economy*, Vol. 87, No. 1, 1979, pp. 89-107.
- LUCAS, Robert E., Jr. and Leonard A. RAPPING, "Real Wages, Employment and Inflation", in E. Phelps (ed.), *Microeconomic Foundations of Employment and Inflation Theory*, W.W. Norton, New York, 1970, 434 pp.
- MALHOTRA, Suresh, "Job Search Behaviour: An Empirical Analysis of Unemployment Duration", Ph.D. Dissertation, University of Washington, 1976.
- PHELPHS, E.S., (ed.), *Microeconomic Foundations of Employment and Inflation Theory*, W.W. Norton, New York, 1970, 434 pp.
- SANT, Donald T., "Reservation Wage Rules and Learning Behaviour", *Review of Economics and Statistics*, Worcester, Vol. 59, No. 1, February 1977, pp. 43-49.
- SCHMIDT, Ronald M., *The Determinants of Search Behaviour and the Value of Additional Unemployment*, Working Paper Series No. 7429, Graduate School of Management, University of Rochester, September 1974.
- STEPHENSON, Stanley P., Jr., "The Economics of Youth Job Search Behaviour", *Review of Economics and Statistics*, Vol. 58, No. 1, February 1976, pp. 104-111.
- STIGLER, George J., "Information in the Labour Market", *Journal of Political Economy*, Vol. 70, No. 5, October 1962, Part II, pp. 94-105.
- STIGLER, George J., "The Economics of Information", *Journal of Political Economy*, Chicago, Vol. 69, No. 3, June 1961, pp. 213-225.

TOBIN, J., "Inflation and Unemployment", *American Economic Review*, Vol. 62, No. 1, June 1972, pp. 1-18.

WELCH, Finis, "What Have We Learned from Empirical Studies of Unemployment Insurance", *Industrial and Labour Relations Review*, Vol. 30, No. 4, July 1977, pp. 451-461.

## Le taux de salaire d'acceptation sur les marchés du travail au Canada

L'article étudie les exigences salariales des chômeurs en quête de travail à partir de la théorie de la recherche d'emploi, laquelle soutient que le chômage est un investissement productif pour les individus. Cette théorie tend à démontrer que les imperfections des marchés du travail génèrent tout un éventail de taux de salaires pour un type donné de qualification et qu'il serait payant pour un chômeur de ne pas accepter automatiquement la première offre salariale qui se présente, mais d'en rechercher une qui soit plus appropriée. Cependant, cette recherche ne peut se prolonger indéfiniment parce qu'elle coûte quelque chose. Pour maximiser ses revenus, le chercheur d'emploi doit ajuster le gain qu'il escompte obtenir au coût de la recherche additionnelle. L'offre salariale qui marque ce point d'équilibre se définit sous le nom de taux de salaire d'acceptation. La théorie de la recherche d'emploi soutient que les individus se comportent comme s'ils connaissaient la notion du salaire d'acceptation qu'ils espèrent, soit le refus d'offres salariales inférieures au salaire d'acceptation et l'acquiescement à un salaire dont le taux lui est égal ou supérieur. Le salaire d'acceptation représente donc la demande salariale du travailleur ou ses exigences salariales, et les deux expressions sont synonymes. Si l'on peut découvrir que les individus se comportent de façon à obtenir le salaire d'acceptation, on aura réussi à démontrer que la recherche est valable comme explication théorique du chômage. Ainsi, l'objet premier de la présente étude est de vérifier de façon empirique l'hypothèse du salaire d'acceptation.

Le deuxième objectif de l'article consiste à examiner l'influence du salaire d'acceptation sur la durée du chômage. L'une des questions qui revient constamment, tant dans la théorie que dans la pratique économiques, c'est la nature des ajustements économiques que les chômeurs sont disposés à accepter afin d'obtenir du travail. On présente souvent le marché du travail comme exemple d'un marché d'une rare rigidité en matière d'ajustements des taux de salaires à la baisse. Nous examinons ces ajustements de salaires au fur et à mesure que la durée du chômage s'allonge. Ceci sera fait pour différents groupes de travailleurs et dans des conditions de marché différentes. Les travailleurs à bas salaire sont placés dans une catégorie différente de ceux qui reçoivent des salaires plus élevés. Le cas des travailleurs syndiqués est considéré à part de ceux qui ne le sont pas. Les écarts dans les taux de chômage sont utilisés comme indice pour identifier les divers états du marché du travail.

Les données proviennent d'une enquête sur la main-d'oeuvre du ministère de l'Industrie et du Commerce pour l'année 1978. Cette enquête englobe les individus de diverses localités, individus qui ont été mis à pied ou qui ont abandonné volontairement leur emploi à la suite de la fermeture d'un établissement ou de la diminution

de la production. Les équipes d'enquêteurs ont recueilli la liste de ces personnes auprès des employeurs dans les localités choisies et elles ont fait des efforts pour rencontrer chacune de ces personnes. On leur a demandé d'indiquer leurs expériences de travail et de chômage pendant la période de 1973 à 1978. Puisque la théorie de la recherche insiste sur la nature volontaire du chômage, on a vérifié les implications de la théorie à l'aide de données sur les périodes de chômage où le travailleur avait décidé de son propre chef d'abandonner le travail.

Les constatations que l'on a faites relativement aux taux de salaires postérieurs aux périodes de chômage sont utilisées pour estimer la fonction du salaire d'acceptation en deux étapes. En premier lieu, on a tenté de déterminer pour chaque individu le salaire qu'il escomptait obtenir en tenant compte pour chacun des caractéristiques du marché du travail. En deuxième lieu, le taux de salaire qu'on escomptait obtenir tient compte de variables qui représentent le coût de la recherche pour établir le taux de salaire d'acceptation. En accord avec l'hypothèse de la théorie de la recherche, plus le salaire escompté est élevé, plus le taux de salaire d'acceptation augmente, alors que plus le coût de la recherche s'accroît, plus le taux de salaire d'acceptation baisse.

Ces prévisions sont d'ailleurs confirmées par les vérifications empiriques qu'on a faites tant chez les hommes que chez les femmes: le salaire escompté élève le salaire d'acceptation et les coûts de la recherche l'abaissent. En d'autres termes, les individus se comportent comme s'ils avaient une idée du taux de salaire d'acceptation. Cette constatation indique que le comportement de ces individus en chômage est caractérisé par la recherche d'un emploi meilleur plus que par la recherche d'un emploi quelconque. Étant donné le taux de salaire qu'ils espèrent obtenir, les individus exercent un certain contrôle sur la durée de leur chômage. Si la durée du chômage était entièrement fonction de la disponibilité des emplois, il y aurait un rapport significatif entre le salaire d'acceptation et le salaire escompté et, d'autre part, l'on n'aurait pas noté le coût de la recherche de travail. Ainsi, les résultats obtenus laissent-ils voir qu'une part du chômage au moins est attribuable aux délais dans l'acceptation d'un emploi.

Pour ce qui est de la flexibilité, on a constaté que le salaire d'acceptation décroît à mesure que la durée du chômage augmente. Cependant, cette flexibilité à la baisse est très faible — la baisse étant d'à peine .12 pour cent par mois (en termes réels). Si le salaire d'acceptation était de \$120.00 par semaine (en termes réels au début de la période de recherche), il déclinerait (pour une moyenne de 24 semaines) de .72 pour cent ou, approximativement, de \$1.00, ce qui est vraiment un très faible déclin. On note un degré plus marqué de flexibilité à la baisse si on considère des travailleurs dont les salaires sont plus élevés (une rémunération supérieure à \$150.00). Pour les hommes, elle est de .36 pour cent par mois et pour les femmes de .80 pour cent par mois. Pour les travailleurs dont le salaire est plus bas (des salaires inférieurs à \$150.00 par semaine), le degré de flexibilité n'est pas significatif. Les résultats indiquent aussi que, pour les travailleurs syndiqués, il y a un déclin quelque peu plus prononcé du salaire d'acceptation (.20 pour les hommes et .16 pour les femmes) que pour les travailleurs non syndiqués pour qui le déclin est sans signification. On a également découvert qu'un mauvais climat économique, marqué par des taux de chômage élevés, s'accompagne de taux de déclin plus forts.